

Work Order ID 50721 - 2
 July 21, 2009 12:37:56 PM

em ID:
 Revision ID:
 Item Name:
 Start Date:
 Required Date:
 Reference:
 Approvals:

D3691-1
 U/R
 STUD

7/15/09
 7/15/09

Start Qty: 12.00
 Req'd Qty: 12.00

30 split 1
29

Accept



Setup Start
 Stop



Cust Item ID:
 Customer:

Process Plan:
 QC:

Date:
 Date:

Tooling:
 SPC (Y/N):

Date:
 Date:

Run Start
 Stop



Sequence ID/
 Work Center ID
 Draw Nbr

Operation
 Description
 Revision Nbr
 Rev U/R

Set Up/
 Run Hours
 Draw
 Number
 Draw
 Rev.
 Plan
 Code
 Accept
 Qty
 Reject
 Qty
 Reject
 Number
 Insp.
 Stamp

D3691
 100
 Bandsaw
 Jeaspa Bandsaw

BAND SAW

Memo
 DO NOT USE CHOP SAW

0.00

0.00

SA 09/07/28
 Cut blank 7.850" long

30 *Ø*

110
 Doosan
 Doosan Lathe

DOOSAN LATHE

Memo
 1-Turn as per Folio FA716 Rev: *1/A* & Dwg D3691 Rev: *13* 1-2-Deburr
 per dwg D3691

0.00

0.00

SA 09/07/28

30 *Ø*

QC2- Inspect parts off machine FAI/FAIB

Memo

0.00

0.00

SA 09/07/28

30 *Ø*

120
 QC
 Quality Control

Work Order ID 50721

July 21, 2009 12:37:56 PM

Item ID:
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Start Date:
Required Date:
Reference:
Approvals:

D3691-1

U/R

STUD

7/15/09

Start Qty: 12.00

7/15/09

Req'd Qty: 12.00

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

130

Lathe Conv
Conventional Lathe

140

QC
Quality Control

150

Doosan
Doosan Lathe



Accept



Setup Start

Stop

Cust Item ID:

Customer:

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

CONVENTIONAL LATHE

0.00

Memo

0.00

Face to finished length as per dwg D3691 AND center drill as per Dwg D3691

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

0.00

DOOSAN LATHE

0.00

Memo

0.00

1- Turn as per Folio FA716 Rev: 11/A & Dwg D3691 Rev: 3 12-Deburr
per dwg D3691

ork Order ID 50721

Page 3



Accept



Setup Start



Stop



Cust Item ID:

Customer:

Run Start



Stop



Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

0.00

SA / 09.07.30

30

QC8- Inspect parts - second check

0.00

Memo

0.00

ml 09/08/04

30

Identify as per dwg & Stock Location:

0.00

Memo

0.00

N/A see next page (seq. 240)

870



by 21. 2009 12:37:56 PM

em ID: D3691-1

revision ID: U/R

tem Name: STUD

start Date: 7/15/09

Required Date: 7/15/09

Reference:

Approvals:

Process Plan:

QC:

QC

Quality Control

QC

Quality Control

QC

Quality Control

QC

Quality Control

QC

Quality Control

ork Order ID 50721



gust 10, 2009 8:22:43 AM

em ID: D3691-1

evision ID: U/R

tem Name: STUD

start Date: 7/15/09

Required Date: 7/15/09

Reference:

Approvals:

Process Plan:

QC:

Date:

Date:

Tooling:

SPC (Y/N):

Date:

Date:

Run Start

Stop

Cust Item ID:

Customer:

Sequence ID/
Work Center ID

160
QC
Quality Control

Operation
Description

QC2- Inspect parts off machine FAI/FAIB

Memo

Set Up/
Run Hours

0.00

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

QC8- Inspect parts - second check

Memo

0.00

0.00

0.00

0.00

Memo

Issue P/O:

10194

LPI Per ASTM 1417 LEVEL

2) Certificate of conformaty is required

CZ 09/08/11 30

Work Order ID 50721

August 10, 2009 8:22:43 AM

Page 4

Item ID: D3691-I
Revision ID: U/R
Item Name: STUD

Start Date: 7/15/09 Start Qty: 12.00
Required Date: 7/15/09 Req'd Qty: 12.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220



Packaging
Packaging

Memo
Ensure certificate of conformity is attached

0.00

0.00

CL 07/08/11 30

230



QC

Quality Control

QC inspect to current spec
07/08/11

Memo

ensure certificate of conformity is attached

0.00

0.00

⇒ ml 09 08 11

240



Packaging

Packaging

Identify as per dwg & Stock Location: GA

0.00

Memo

0.00

SB 09/08/12

(29)

250. QC 21. 09/08/31

ml 09-08-12

Picklist Print

July 21, 2009 12:37:56 PM

Work Order ID: 50721



Parent Item: D3691-1RevU/R



Parent Item Name: STUD

Start Date: 7/15/09

Required Date: 7/15/09

Start Qty: 12.00

Required Qty: 12.00

Comments:

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

M174PH-H900R1.000

Purchased

No

f

64.5000

8.7644



17-4SS H900 ROUND BAR 1.00

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

MAT

64.5

110215

3.3

110750

24.99

110990 ✓

11.87

111055 ✓

24.34

10.44
10.54

10.44
10.54

SD 05/07/28

DART AEROSPACE LTD

Work Order:

50721

Description:

Std

Part Number:

A3691-1

Inspection Dwg: 3691

Rev: 13

Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST



First Article



Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø.695	±.010 ±.010	Ø.695 .700	✓			
Ø.625	±.004 ±.000	Ø.629	✓			
1.25	±.000 ±.03	1.238	✓			
Ø.825	±.006 ±.001	Ø.827	✓			
Ø.189	±.003 ±.001	Ø.189	✓			
.750	±.000 ±.010	.743	✓			
1.31	±.030	1.310	✓			
1.65	±.030	1.65	✓			
Ø.659	±.000 ±.015	Ø.651	✓			
7.750	±.015	7.755	✓			
2.90	±.030	2.915	✓			
.375	±.000 ±.010	.368	✓			
R.25	±.030	R.25	✓			
R.50	±.030	R.50	✓			
Major Ø	Max. .7485 Min. .7391	.7465	✓			
M.O.W.	Max. .7487 Min. .7687	.7429	✓			

Measured by:

SA

Audited by:

JML

Prototype Approval:

N/A

Date:

09/04/28

Date:

09/08/04

Date:

N/A

Rev

Date

Change

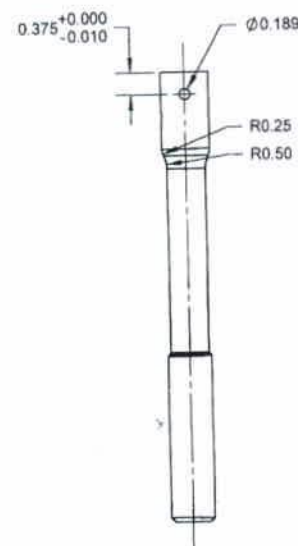
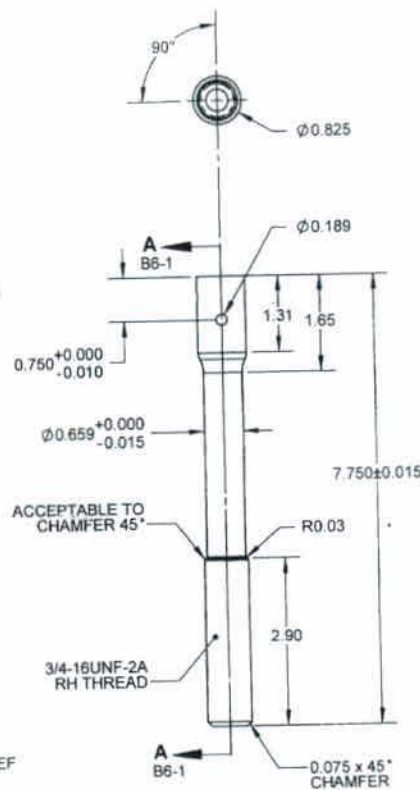
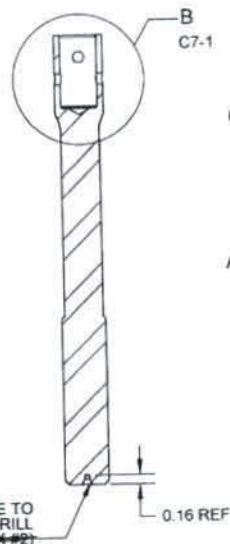
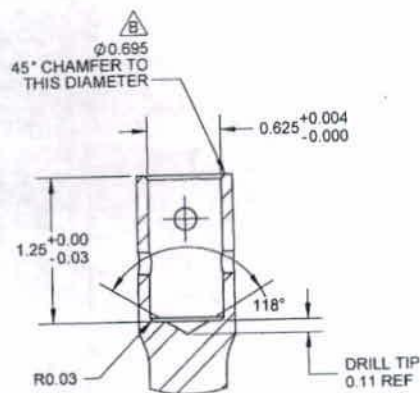
Revised by

Approved

A

New Issue

KJ/JLM



UNDER REVIEW
09/03/10
CHANGE NO CENTER DRILL
TO #4

RELEASED
08/12/15

- NOTES:**
- 1) MATERIAL: 17-4PH STAINLESS STEEL ROUND BAR PER AMS 5643 H-900 CONDITION
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.81 lb
 - 8) LPI PER ASTM 1417 LEVEL 2

B	CHANGE TO 17-4PH H-900 (Zn A8-1); 0.695 WAS 0.665 (Zn D8-1); REFORMATTED TO CURRENT DWG STANDARDS	RF	08.11.24
A	NEW ISSUE	RF	08.03.12
REV.	DESCRIPTION	BY	DATE
DESIGN	RF		
DRAWN	RF		
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.11.24		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D3691** REV. B
SHEET 1 OF 1
TITLE **STUD** SCALE NTS

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LIQUID PENETRANT TEST REPORT

P- 14945

DATE Aug-10-2009 TIME AM ☒ PM ☐
ACUREN JOB NO. 188-09-001484
PO/WO NO. 10184
WORK LOCATION HAWKESBURY
ACCEPTANCE STD. ASTM 1417 REV./DATE 2007
F.P.I. ON MACHINED PARTS - AND CROSS TUBES
44 STUDS. 20 RAPPELS
7 CROSS TUBES. + 12 STUDS.

DESCRIPTION PROCEDURE NO. LT-6002 REV./DATE * TECHNIQUE NO. LT-6002 REV./DATE
MATERIAL STAINLESS STEEL THICKNESS THIN
WET FLOUORESCENT LIQUID PENETRANT INSPECTION
APPLIED OUT 100% EXTERNAL

DETAILS
☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
BRAND MAGNAFLUX BLACK LIGHT S/N 16459 ☒ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
ANT 2L 67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
ANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LAB NO
OPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N
OPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY CAL DUE DATE DEC 8 - 2009

SURFACE
CONDITION ☐ AS GROUND ☐ AS WELDED ☐ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL
TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☐ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F
TS- ☐ METRIC ☐ IMPERIAL

5 STUDS - W.O. 50933 ✓
5 STUDS - W.O. 50721 ✓
5 STUDS - W.O. 50932 ✓
5 RAPPEL - W.O. 50967 ✓
5 RAPPEL - W.O. 50968 ✓
CROSSTUBE - W.O. 51083 ✓
CROSSTUBE - W.O. 51084 ✓
CROSSTUBE - W.O. 51085 ✓
CROSSTUBE - W.O. 50873 ✓
CROSSTUBE - W.O. 50827 ✓
CROSSTUBE - W.O. 50800 ✓
CROSSTUBE - W.O. 50826 ✓
To BUFF AND EXAMINE - INDICATION
To BUFF AND EXAMINE - INDICATIONS
- 6 ITEMS TO EXAMINE AFTER
BUFFING
- OTHER PCS FOUND ACCEPTABLE
TO STANDARD.

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of Care
Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty is expressed or implied by Acuren Group Inc.

REPRESENTATIVE CHANTAL LAVOIE SIGNATURE Chantal Lavoie DTR # E-20068
TECHNICIAN (SIGNATURE) Mike Johnson SIGNATURE Mike Johnson REPORT REVIEWED BY:
(PRINT) Mike Johnson 1ST TECHNICIAN 2ND TECHNICIAN
CGSB LEVEL II SNT LEVEL II CGSB LEVEL II SNT LEVEL II
CGSB REG. NO. 6066 CGSB REG. NO. 6066

Jean-Luc Menard

From: David Shepherd [dshepherd@dartaero.com]
Sent: March 9, 2009 12:48 PM
To: 'Jean-Luc Menard'
Cc: 'Mike Petsche'; 'Roberto Fuentes (Roberto Fuentes)'
Subject: RE: engine mount studs D3691 & D3688

JL,

As discussed, it is acceptable to change from a #2 center drill to a #4 center drill on current production of the D3691 & D3688 engine mount studs. Please consider this email acceptance of this deviation.

Roberto,

Please work with Kim to put D3691 and D3688 Under Review. Then, please update drawings D3691 and D3688 for future production over the next month or so.

Thanks,
David

-----Original Message-----

From: Jean-Luc Menard [mailto:jmenard@dartaero.com]
Sent: Monday, March 09, 2009 9:44 AM
To: David Shepherd (David Shepherd)
Cc: Mike Petsche; Roberto Fuentes (Roberto Fuentes)
Subject: engine mount studs D3691 & D3688

David,

As dicussed, we would change the center drill in the parts to #4 from #2.

This would result in better support in the lathe resulting in better surface finish.

This is fine for these parts, what did you want to do for future parts?

Let me know.

JLM

Jean-Luc Menard

Production Engineering Coordinator

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Hawkesbury Ontario

Canada K6A 1K7

Tel: (613) 632-5200 Ext 227

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